

It would have been more politic had Mr. Howorth contented himself with local deluges; but no, his destroying waves must pass over the whole earth. What is to generate these destructive waves, what multiplication of a Krakatō catastrophe is needed, how many cubic miles of mountain summit must fall into the sea, or of ocean bed leap up into the air, he forbears to tell us. Here, after a laborious scrutiny of facts, the reader is refreshed by a use of the imagination.

We leave a host of minor difficulties unnoticed for want of space, such as the occurrence of erratic blocks in positions of unstable equilibrium, the relation of drifts, supposed cataclysmal by the author, to the valleys in which they occur, the escape of apterous birds like the moa and the dodo, and the like. We must part from the book by saying that it exhibits great industry in the collection of materials—so that it will long be valuable as a work of reference—with a curious want of mental perspective, and a misapplied ingenuity of reasoning.

NEW ZEALAND SCALE INSECTS.

An Account of New Zealand Scale Insects. By W. M. Maskell, F.R.M.S. (Wellington: Geo. Didsbury, 1887.)

THIS book shows that the valuable work which is being done in South Australia by Mr. Frazer Crawford, Inspector under the Vine-Protection Act, is being done on a still greater scale in New Zealand. It affords an example of the great service which may be rendered by plain and sound publications on the subject of injurious insect attacks in the colonies. In the mother country the works which have been prepared for the Agricultural Department of the Privy Council by Mr. Whitehead, and Miss E. A. Ormerod's constant valuable publications on economic entomology, show what can be achieved in this field.

It is eminently satisfactory to find such an important subject taken up in New Zealand by an observer so well known as Mr. Maskell. The work extends to 116 pages, and includes exhaustive information on the Coccidæ affecting the crops of the island. The life-history of the Coccidæ (which are divided by the author as follows: I. Diaspidinæ; II. Lecanidinæ; III. Hemicoccidinæ; IV. Coccidinæ) is given in all its stages, a whole chapter being devoted to it, with descriptions of the male and female perfect insects in detail, and another to the natural checks to their increase, and parasites, &c.

The remedies against Coccidæ are fully treated of in Chapter V. The author gives a list of washes, of which he says: "Some of the substances here given are manifestly unsuitable for general use on account of their expense, at any rate in the open air; yet it is well to include them, as they are all suggested in some work or other, or in the replies of gardeners and fruit-growers to Parliamentary inquiries, and the objections to them ought to be known."

Chapter VI. is devoted to "A Catalogue of Insects"—that is, of the Coccidæ—and "A Diagnosis of Species," and will be found to be of great service to all students of entomology. Particular attention is paid to the cottony-cushion scale, the *Icerya purchasi*, whose ravages in South Africa have been so ably treated of in the

pamphlet lately published by the Consulting Entomologist of the Royal Agricultural Society of England, also by the State Inspector of the Fruit Pests of California, and more recently by Prof. Riley, the well-known Entomologist of the Department of Agriculture of the United States. "Tree-growers should especially beware of this insect, and the best plan to adopt would be to burn at once any tree found infested with it."

This chapter, which occupies almost two-thirds of the book, is succeeded by an index of plants and the Coccidæ attacking them, with the useful reminder that in hot-houses and green-houses all sorts of plants are liable to attack.

The work also contains twenty-three well-drawn plates, which convey a good idea of the Coccidæ to those who have not the opportunity of studying them. Plates I., II., and III. deal with anatomical points or structural details; Plates IV. to XX. give a large selection of insects, with specimens of the various trees and plants they infest; Plate XXI. is especially valuable as giving the male insects *Celostoma zelandicum* and *C. wairoense*, the antenna of the former and the head of the latter being especially well marked. Plate XXII. gives the honey-dew and resulting fungi, and Plate XXIII. parasites of Coccidæ. "Fig. 1, *a*, pupa of Hymenopterous parasites; *b*, the same pupa under the waxy test of *Ctenochiton perforatus*; *c*, imago. Fig. 2, *a*, brown and yellow fungi on *Ctenochiton viridis*; *b*, upper side of brown fungus; *c*, under side of the same, with attached fungoid sheet; *d*, *Ctenochiton viridis* (test removed), filled with yellow fungus, and with globular mass of the same above it."

From the above brief sketch of the contents of Mr. Maskell's book it will be seen that it is a welcome addition to entomological literature. It is written in plain and forcible language, and there is no padding or beating about the bush for the reviewer to find fault with. There is an excellent tabulated explanation of terms used, and students will be much pleased with the author's classification, or rather division or arrangement, of the Coccidæ, based upon a plan most useful for economic entomology:—

"Neglecting entomological distinctions, we may divide the Coccidæ roughly into

"(a) Insects attacking deciduous plants;

"(b) Insects attacking evergreen plants;

or again:

"(c) Insects living usually on the bark;

"(d) Insects living usually on the leaves;

"(e) Insects living on both bark and leaves;

or lastly:

"(f) Insects covered with hard shields or 'scales';

"(g) Insects covered with cotton;

"(h) Insects naked."

Among other salient points the importance of destroying the eggs is frequently urged upon those who wish to extirpate coccids, and attention is wisely drawn to the fact that "it is a fallacy to imagine that rule-of-thumb methods, not founded upon any knowledge of the nature, habits, and life-history of the insects, are likely to be really efficacious."

We agree with the author that an increase in works on

economic entomology is always of good service in any country, and New Zealand may be congratulated on having Mr. Maskell at hand to supply a demand generated by the improved intelligence of the agricultural community.

OUR BOOK SHELF.

Pen and Pencil in Asia Minor; or, Notes from the Levant. By William Cochran. Illustrated with eighty-nine engravings, made chiefly from water-colour sketches by the Author. (London: Sampson Low and Co., 1887.)

THIS well-printed volume of over 450 pages is one of a class that we had thought had become extinct. The notes begin with the arrival of the author at the Alexandra Docks in Liverpool, and are continued almost daily, in some instances hourly, until the close of a five-months' tour through the Mediterranean to Smyrna, Constantinople, and then, with some slight journeys inland, back again by the same route to Liverpool.

No doubt the journey was pleasant, and we feel sure that the note-taking and the water-colour sketching were very agreeable occupations for the tourist; but probably even the author's friends would admit that as now laid before the world the text contains nothing either very novel or attractive, while of the many scenes sketched, omitting the sketches from photographs, we may say that it would be hardly fair to criticize them from an art point of view. The volume is not, however, without its merits. The author deserves credit for the earnest way in which he has called attention to the importance of encouraging the tea and silk industries, and we sincerely hope for the good of our colonies that his efforts in the direction of silk culture in Australia and New Zealand may eventually be as successful as tea-farming has been in Ceylon.

One chief object of the voyage to Smyrna was to see the result of Mr. John Griffith's silk-farming in Asia Minor. At one time the silk industry was one of great importance in and about Smyrna, but owing to the silkworm disease it became almost extinct, so that even the very mulberry-trees were used for firewood. Now, through the philanthropic zeal of Mr. Griffiths in supplying silkworm eggs not only free from disease but raised from carefully-selected varieties, the industry is being restored, and large numbers of mulberry-trees are being planted.

Several chapters in this volume are devoted to the subjects of the rearing of silkworms, and of the treatment of the mulberry-trees. From the hatching out of the larval forms to the reeling off of the silk, only some forty to forty-five days elapse, but though the labour be short, the care and attention required are very great, and the successful silk rearer learns various lessons of method and cleanliness which are of permanent value.

In chapter ix. we have a summary of Mr. Griffith's valuable report on the silk trade, furnished to the Department of State, Washington. From it we learn that at one time in Smyrna there were three large silk-reeling factories, driven by steam, where hundreds of female hands were employed. When, on the failure of the indigenous worms, Japanese worms were introduced, it was found that it required double the number of cocoons to yield the same weight of silk. With Mr. Griffith's improved native race of silkworms, the quality of the silk is better, and the produce much heavier than before. To those interested in silk culture we can recommend the perusal of this volume, which, indeed, would be better described as "Notes on Silk Culture in Smyrna."

A Catalogue of the Flora of Matheran and Mahableshwar. By the Hon. H. M. Birdwood, M.A., LL.M. With a Note by Dr. Theodore Cooke, LL.D., F.G.S. (1887.)

THIS little botanical work is a reprint from the Journal of the Bombay Natural History Society. It will be useful to persons visiting the localities botanized; and the records of the upper limits of various plants are interesting to botanists at a distance.

Mahableshwar is in the Ghauts, about a hundred miles south of Bombay, and the highest part of this healthy resort is nearly 5000 feet above sea-level, so that there are considerable changes in the vegetation in the ascent. The present catalogue contains the names of less than 500 species of plants, a number which future investigations will doubtless double. As the Bombay Natural History Society is still in its infancy, some singular slips in the classification of the plants are perhaps excusable; and we hope the members will not feel discouraged at our pointing out that ferns are not "plants with cellular tissue only," nor are mosses "leafless plants."

The Bombay Natural History Society possesses a herbarium of Mahableshwar plants, presented to it by Dr. Cooke, and it may be hoped that this will form the nucleus of a collection adequately representing the whole flora of the entire Presidency. Up to the present time the Bombay Government has shown but little interest in botanical work, and possesses none of the appliances for its prosecution to be found at Calcutta, Saharunpore, Madras, or Peradeniya. Yet for the Forest Department alone some kind of herbarium and botanical library is indispensable, unless its officers are to grope in the dark as to a large proportion of the plants they come across in their duties.

However, this is by the way. It is a sign of the development of a healthier interest when a hard-worked official like a judge of the High Court is found to take the lead in so creditable a way in the study of the local flora.

L'Homme avant l'Histoire. Par Ch. Debierre. (Paris: J. B. Baillière et Fils, 1888.)

IN this book M. Debierre gives a clear and interesting account of some of the results of anthropological research. In dealing with disputed points, however, he is apt to arrive at conclusions somewhat hastily. The doctrine of the unity of the human race he rejects, but he contents himself with a very slight and inadequate consideration of the arguments which may be advanced on the other side. Again, he assumes that there can be no doubt whatever as to the Asiatic origin of the Aryan or Indo-European race. That the original home of the Aryans was in Europe cannot be held to have been proved, but the theory has been accepted by so many investigators, and so much may be said in favour of it, that in a work of this nature it ought at least to have been explained and discussed.

Philips' Handy Volume Atlas of the British Empire, with Statistical Notes and Index. (London: Philip and Son, 1887.)

THIS little book is among the first British work of its sort that we have seen. It is extremely neatly put together and is well edited throughout. It contains 64 plates and on them 110 maps, showing the British possessions in the various parts of the globe. After each map is a short analysis of position, extent, population, climate, industries, government, orography and hydrography, &c., &c. In addition to the maps there are plans of various towns. Just before the index are given "Comparative Diagrams of the British Empire," comparing area, population, trade, and revenue of the British possessions of the different quarters of the globe. This is followed by the